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10/594,779	07/12/2007	Shinya Fujibayashi	Q111691	7145

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EXAMINER	
DOLLINGER, MICHAEL M	
ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/594,779	FUJIBAYASHI ET AL.	
	Examiner	Art Unit	
	MIKE DOLLINGER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-9,11,12,15-17,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,11,12,15-17,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/08/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 5, 6, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al (US 2003/0125479 A1).

2. Kinsho discloses resin particles for use as slush molding resin [0001] having a structure such that resin particle (A) composed of resin (a) adheres to the surface of a resin particle (B) composed of a resin (b) [0015]. The resin particle (A) has a volume average particle diameter of 0.01 to 30 μm [0018] and the resin (a) is at least one resin selected from a group including polyurethane and vinyl resin [0024]. The vinyl resin includes copolymers including carboxyl group containing vinyl monomers including (meth)acrylic esters [0040-0041] and hydroxyl group containing vinyl monomers [0048] including hydroxyethyl (meth)acrylate [0049]. The resin (a) has a melting point of over 50°C and preferably over 80°C [0126]. However, the resin (a) preferably has a glass transition temperature of up to 300°C [0123] and a crosslinked structure [0126] which would indicate a melting temperature above 300°C or possibly no melting temperature at all, respectively. The resin particle (B) has a volume average particle diameter of 0.1 to 300 μm [0018] and the resin (b) is at least one resin selected from a group including polyurethane [0024]. The resin (b) may be the chosen from the same resins as resin (a)

[0190] which may be thermoplastic or thermosetting [0034]. When the resin particle is used for slush molding, the melting point of resin (b) is generally 0°C to 200°C [0192] and is therefore capable of melting at 200°C. The resin particle for slush molding comprises preferably 0.1 to 50 weight % of resin particle (A) and 50 to 99.9 weight percent of particle (B) [0278]. The disclosed particle (B) reads on the claimed particle (B) and the disclosed particle (A) corresponds to the claimed particle (E). Several additives may be incorporated into the composition [0265] wherein they may be added after the formation of the resin particles [0266].

3. Regarding the limitation in claim 5 requiring that the powders (A) and (B) be dry-blended, this is a product-by-process limitation. The methods by which claimed compositions are created by are not pertinent, unless applicant can show a different product is produced. Applicants may argue that the product described in Kinsho produces a compound particle (C) wherein the particle (B) is attached to the surface of (A) [abstract]. However, Kinsho also discloses an additional process wherein the adherent resin particles (A) and resin particles (B) are separated from each other to give a mixed aqueous dispersion [0030] and a process wherein the aqueous dispersion is dried [0272]. This dried product appears to be identical to the product of applicants' claims.

4. While Kinsho does not disclose the claimed composition with sufficient specificity to anticipate the claims, the claims are still obvious over the disclosure. If Applicant argues that the claimed embodiments are not disclosed with sufficient specificity and that examiner is picking and choosing with improper hindsight, Examiner notes that

mere fact that a reference suggests a multitude of possible combinations does not in and of itself make any one of those combinations less obvious. See *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al (US 2003/0125479 A1) with further evidence provided by Toyama et al (US 4,686,138).

6. Kinsho, discussed above, does not specifically disclose silica fine powder as an additive. Kinsho does disclose in Example 1 the addition of an antiblocking agent SYLLOID 978 [0325].

7. Toyama discloses that SYLLOID 978 is a synthetic silica fine powder [col 10 lines 20-22].

8. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al (US 2003/0125479 A1) in view of Suling et al (US 4,233,424).

9. Kinsho, discussed above, does not disclose the resin particles (A) as crosslinked by an organic diisocyanate. Kinsho does disclose, however, that the resin particle (A) has a crosslinked structure [0126].

10. Suling discloses a two phase bead polymer having an average bead diameter of 10 to 120 µm comprising at least one methacrylic acid ester and optionally hydroxyalkyl ester of methacrylic acid [abstract]. Suling teaches that it is known in the art that the toughness of polymethyl methacrylate additives can be improved by crosslinking with polyisocyanates that react with hydroxyl groups on the vinyl polymer chain [col 1 line 31-45]. Suling discloses suitable diisocyanates as aliphatic diisocyanates [col 5 lines 34-37] which read on the claimed organic diisocyanates.

11. It would have been obvious to one having ordinary skill in the art the time the invention was made to have prepared a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a fine particle powder (E) polymerized from alkyl (meth)acrylate and hydroxyethyl methacrylate and crosslinked with an organic diisocyanate because Kinsho teaches that it is within the skill of the art to prepare a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a crosslinked fine particle powder (A) polymerized from alkyl (meth)acrylate and hydroxyethyl methacrylate and Suling teaches that it is within the skill of the art to crosslink a vinyl polymer particle containing hydroxyl functions with a polyisocyanate. One would have been motivated to use crosslink the particle powder (A) of Kinsho with a polyisocyanate because Suling teaches that the toughness of the polymeric additives is improved. Absent any evidence to the contrary, there would have been a reasonable expectation of success using the polyisocyanate of Suling as the crosslinker for the particle powder (A) of Kinsho.

12. Claims 1, 4, 9, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al (US 2003/0125479 A1) in view of Siol et al (US 5,714,261).

13. Kinsho discloses resin particles for use as slush molding resin [0001] having a structure such that resin particle (A) composed of resin (a) adheres to the surface of a resin particle(B) composed of a resin (b) [0015]. The resin particle (A) has a volume average particle diameter of 0.01 to 30 μm [0018] and the resin (a) is at least one resin selected from a group including polyurethane and vinyl resin [0024]. The vinyl resin includes copolymers including carboxyl group containing vinyl monomers including (meth)acrylic esters [0040-0041], hydroxyl group containing vinyl monomers [0048] and other vinyl esters including ethylene glycol di(meth)acrylate [0061]. The resin (a) has a melting point of over 50°C and preferably over 80°C [0126]. However, the resin (a) preferably has a glass transition temperature of up to 300°C [0123] and a crosslinked structure [0126] which would indicate a melting temperature above 300°C or possibly no melting temperature at all, respectively. The resin particle (B) has a volume average particle diameter of 0.1 to 300 μm [0018] and the resin (b) is at least one resin selected from a group including polyurethane [0024]. The resin (b) may be the chosen from the same resins as resin (a) [0190] which may be thermoplastic or thermosetting [0034]. When the resin particle is used for slush molding, the melting point of resin (b) is generally 0°C to 200°C [0192] and is therefore capable of melting at 200°C. The resin particle for slush molding comprises preferably 0.1 to 50 weight % of resin particle (A) and 50 to 99.9 weight percent of particle (B) [0278]. The disclosed particle (B) reads on

the claimed particle (B) and the disclosed particle (A) corresponds to the claimed particle (A).

14. Regarding the limitation in claim 1 requiring that the powders (A) and (B) be dry-blended, this is a product-by-process limitation. The methods by which claimed compositions are created by are not pertinent, unless applicant can show a different product is produced. Applicants may argue that the product described in Kinsho produces a compound particle (C) wherein the particle (B) is attached to the surface of (A) [abstract]. However, Kinsho also discloses an additional process wherein the adherent resin particles (A) and resin particles (B) are separated from each other to give a mixed aqueous dispersion [0030] and a process wherein the aqueous dispersion is dried [0272]. This dried product appears to be identical to the product of applicants' claims.

15. Kinsho does not disclose the resin particle a containing the relative amounts of 99-70% by weight of alky (meth)acrylate and 1-30% by weight of polyhydric alcohol.

16. Siol discloses a crosslinked plastic particle based on polymath(meth)acrylate with a particle diameter of 1-15 μm synthesized from the monomers A) methyl methacrylate in fraction of 20 to 99.9 wt % and D) at least one crosslinking monomer CM containing at least two radically polymerizable groups in the molecule in fraction of 0.1 to 20 wt % [abstract]. The crosslinking monomer includes ethylene glycol dimethacrylate [col 3 line 25]. Siol discloses that plastic particles have increased thermostability [col 1 lines 6-8] may be used to increase the thermostability of thermoplastic molding materials when added in amount of 0.01-30 wt % [col 5 lines 4-27].

17. It would have been obvious to one having ordinary skill in the art the time the invention was made to have prepared a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a fine particle powder (A) polymerized from 99-70 wt % alkyl (meth)acrylate and 1-30 wt % of a polyhydric alcohol poly(meth)acrylate because Kinsho teaches that it is within the skill of the art to prepare a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a fine particle powder (A) polymerized from alkyl (meth)acrylate and of a ethylene glycol dimethacrylate and Siol teaches that it is within the skill of the art to prepare a plastic particle for adding to polymer molding composition which is polymerized from 20 to 99.9 wt % methyl methacrylate and 0.01 to 20 wt % of ethylene glycol dimethacrylate. One would have been motivated to use the plastic particle of Siol as the particle powder (A) of Kinsho because Siol teaches that the plastic particles have good thermostability and improve the thermostability of high temperature molding compositions. Absent any evidence to the contrary, there would have been a reasonable expectation of success using the plastic particle of Siol as the particle powder (A) of Kinsho.

18. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinsho et al (US 2003/0125479 A1) in view of Siol et al (US 5,714,261) with further evidence provided by Toyama et al (US 4,686,138).

19. Kinsho in view of Siol, discussed above, do not specifically disclose silica fine powder as an additive. Kinsho does disclose in Example 1 the addition of an antiblocking agent SYLLOID 978 [0325].

20. Toyama discloses that SYLLOID 978 is a synthetic silica fine powder [col 10 lines 20-22].

21. Claims 1, 4, 8, 9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al (US 5,906,704) in view of Siol et al (US 5,714,261).

22. Matsuura discloses hot-melt resin powder composition useful for slush molding [col 1 lines 7-15] which comprises a thermoplastic polyurethane resin (B) [col 2 lines 35-36]. The thermoplastic polyurethane resin (B) is generally used in the form of a powder [col 6 lines 5-7] and has an average particle size of 10 to 500 μm, preferably 30 to 200 μm [col 14 lines 22-25]. The disclosed thermoplastic polyurethane resin (B) reads on the claimed thermoplastic polyurethane resin powder (B). The composition also contains an antiblocking agent (G) which may be any known inorganic or organic antiblocking agent [col 12 lines 49-51]. The organic antiblocking agent includes thermoplastic resins including poly(meth)acrylate resins with a particle size of 10μm or less [col 12 lines 53-59] and the inorganic antiblocking agent is preferably silica [col 12 lines 60-61]. The antiblocking agent (B) is present in an amount of 0.5 to 3 parts by weight, preferably 0.7 to 2.5 parts by weight per 100 parts by weight of said resin powder [col 13 lines 12-15]. The antiblocking agent (G) may be simply mixed with the

hot-melt resin powder [col 13 lines 37-40] which reads on the product-by-process limitation of dry-blending in claim 1.

23. Matsuura does not disclose the poly(meth)acrylate particles having any particular composition and do not disclose the particular composition of claimed fine particle powder (A) of claim 1.

24. Siol discloses a crosslinked plastic particle based on polymath(meth)acrylate with a particle diameter of 1-15 µm synthesized from the monomers A) methyl methacrylate in fraction of 20 to 99.9 wt % and D) at least one crosslinking monomer CM containing at least two radically polymerizable groups in the molecule in fraction of 0.1 to 20 wt % [abstract]. The crosslinking monomer includes ethylene glycol dimethacrylate [col 3 line 25]. Siol discloses that plastic particles have increased thermostability [col 1 lines 6-8] may be used to increase the thermostability of thermoplastic molding materials when added in amount of 0.01-30 wt % [col 5 lines 4-27].

25. It would have been obvious to one having ordinary skill in the art the time the invention was made to have prepared a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a fine particle powder (A) polymerized from 99-70 wt % alkyl (meth)acrylate and 1-30 wt % of a polyhydric alcohol poly(meth)acrylate because Matsuura teaches that it is within the skill of the art to prepare a powdered resin composition comprising a thermoplastic polyurethane resin powder (B) and a fine particle powder (A) poly(meth)acrylate and Siol teaches that it is within the skill of the art to prepare a plastic particle for adding to polymer molding composition which is polymerized from 20 to 99.9 wt % methyl methacrylate and 0.01 to

20 wt % of ethylene glycol dimethacrylate. One would have been motivated to use the plastic particle of Siol as the particle powder (A) of Matsuura because Siol teaches that the plastic particles have good thermostability and improve the thermostability of high temperature molding compositions. Absent any evidence to the contrary, there would have been a reasonable expectation of success using the plastic particle of Siol as the particle powder (A) of Matsuura.

Response to Arguments

26. Applicant's arguments, see pages 7-11, filed 04/08/2010, with respect to Ohmori et al (US 6,177,508 B1) and all secondary and evidentiary references have been fully considered and are persuasive. The rejections of 12/08/2009 have been withdrawn.

27. Applicant's arguments, see pages 11-14, filed 004/08/2010, with respect to Kanetani et al (JP 02038453) in view of Jin et al (US 4,022,849) and tertiary references have been fully considered and are persuasive. The rejections of 12/08/2009 have been withdrawn.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIKE DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/mmd/

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